



Marlex® HHM 5502BN Polyethylene

Version 1.11

Revision Date 2023-08-07

MSDS number: AA00974-0000000121

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product Name : Marlex® HHM 5502BN Polyethylene
 Material : 1118573, 1127943, 1127844, 1124957, 1120264, 1120263,
 1120262, 1120191, 1120190, 1018781, 1018783, 1079987,
 1079986, 1079988, 1079981, 1079985, 1079984, 1025220,
 1019346, 1018782, 1019345, 1019347, 1019348, 1019349,
 1019350, 1018785, 1018784

Recommended use of the product : Polymer
 Restrictions on use : None known.

Address : Chevron Phillips Chemical Company LP
 10001 Six Pines Drive
 The Woodlands, TX 77380

Address : CHEVRON PHILLIPS CHEMICALS ASIA PTE. LTD.
 C/O DONG WOO CORPORATION
 #B-2601, JEONGJAIL-RO,
 BUNDANG-GU, SEONGNAMI-SI,
 GYEONGGI-DO, 13557
 SOUTH KOREA
 Telephone no.: +612-9186-1132

Emergency telephone:

Health:

866.442.9628 (North America)
 1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)
 Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
 Mexico CHEMTREC 01-800-681-9531 (24 hours)
 South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
 Argentina: +(54)-1159839431

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EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)
 Belgium: 070 245 245 (24 hours/day, 7 days/week)
 Bulgaria: +359 2 9154 233
 Croatia: +3851 2348 342 (24 hours/day, 7 days/week)
 Cyprus: 1401
 Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402
 Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212
 Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Finland: 0800 147 111 09 471 977 (24 hours/day)
 France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
 Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
 Hungary: +36-80-201-199 (24 hours/day, 7 days/week)
 Iceland: 543 2222 (24 hours/day, 7 days/week)
 Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic
 Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371
 67042473. (24 hours.)
 Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Lithuania: +370 (85) 2362052
 Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
 Malta: +356 2395 2000
 The Netherlands: NVIC: +31 (0)88 755 8000
 Norway: 22 59 13 00 (24 hours/day, 7 days/week)
 Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 Portugal: CIAV phone number: +351 800 250 250
 Romania: +40213183606
 Slovakia: +421 2 5477 4166
 Slovenia: Phone number: 112
 Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24
 hours/day, 7 days/week)
 Sweden: 112 – ask for Poisons Information

Responsible Department : Product Safety and Toxicology Group
 E-mail address : SDS@CPChem.com
 Website : www.CPChem.com
 Appointees : 회사명: 리이치 24 시코리아(주).

주소: 서울시 서초구 현릉로 7,

외국기업창업지원연구센터
 (IKP) 908-909호

전화: + 82-1067838981

MEDICAL APPLICATION CAUTION: Do not use this material in medical applications involving permanent implantation in the human body or permanent contact with internal body fluids or tissues fluids or tissues.

Do not use this material in medical applications involving brief or temporary implantation in the human body or contact with internal body fluids or tissues unless the material has been provided

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directly from Chevron Phillips Chemical Company LP or its legal affiliates under an agreement which expressly acknowledges the contemplated use.

Chevron Phillips Chemical Company LP and its legal affiliates makes no representation, promise, express warranty or implied warranty concerning the suitability of this material for use in implantation in the human body or in contact with internal body fluids or tissues.

SECTION 2: Hazards identification**Hazard classification**

Standards for classification and labeling of chemical substances and material safety data sheet (ministry of employment and labor public notice No. 2020-130)

Classification

Not a hazardous substance or mixture.

Warning label elements including precautionary statements

Not a hazardous substance or mixture.

Other hazards which do not result in classification : None

SECTION 3: Composition/information on ingredients

| Common name | Synonyms | CAS-No. | Concentration | KECI Number |
|-------------------------------|-------------------------------|------------|---------------|-------------|
| Polyethylene Hexene Copolymer | Polyethylene Hexene Copolymer | 25213-02-9 | 99 % - 100% | KE-13670 |

SECTION 4: First aid measures

In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

In case of skin contact : If the molten material gets on skin, quickly cool in water. Seek

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- immediate medical attention. Do not try to peel the solidified material from the skin or use solvents or thinners to dissolve it.
- If inhaled : Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion. If symptoms persist, call a physician.
- If swallowed : Do not induce vomiting without medical advice.

Other cautions for Doctors

- Symptoms : No information available.
- Risks : No information available.
- Treatment : No information available.

SECTION 5: Firefighting measures

- Flash point : No data available
- Autoignition temperature : No data available
- Suitable extinguishing media : Water. Water mist. Dry chemical. Carbon dioxide (CO₂). Foam. If possible, water should be applied as a spray from a fogging nozzle since this is a surface burning material. The application of high velocity water will spread the burning surface layer. Avoid the use of straight streams that may create a dust cloud and the risk of a dust explosion. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Specific hazards during fire fighting : Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges.
- Special protective equipment for fire-fighters : Use personal protective equipment. Wear self-contained breathing apparatus for firefighting if necessary.
- Further information : This material will burn although it is not easily ignited.
- Fire and explosion protection : Treat as a solid that can burn. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
- Hazardous decomposition products : Normal combustion forms carbon dioxide, water vapor and may produce carbon monoxide, other hydrocarbons and hydrocarbon oxidation products (ketones, aldehydes, organic acids) depending on temperature and air availability.

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Incomplete combustion can also produce formaldehyde.

SECTION 6: Accidental release measures

- Personal precautions : Sweep up to prevent slipping hazard. Avoid breathing dust. Avoid dust formation.
- Environmental precautions : Do not contaminate surface water. Prevent product from entering drains.
- Methods for cleaning up : Clean up promptly by sweeping or vacuum.
- Additional advice : Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

SECTION 7: Handling and storage**Handling**

- Advice on safe handling : Use good housekeeping for safe handling of the product. Keep out of water sources and sewers. Spilled pellets may create a slipping hazard. Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary, but may not by themselves be sufficient. At elevated temperatures (>350°F, >177°C), polyethylene can release vapors and gases, which are irritating to the mucous membranes of the eyes, mouth, throat, and lungs. These substances may include acetaldehyde, acetone, acetic acid, formic acid, formaldehyde and acrolein. Based on animal data and limited epidemiological evidence, formaldehyde has been listed as a carcinogen. Following all recommendations within this SDS should minimize exposure to thermal processing emissions.
- Advice on protection against fire and explosion : Treat as a solid that can burn. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Secure storage

- Requirements for storage areas and containers : Keep in a dry place. Keep in a well-ventilated place.
- Uses advised against : None known.

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Advice on common storage : Do not store together with oxidizing and self-igniting products.

Specific Use : Polymer

SECTION 8: Exposure controls/personal protection**Chemical exposure standards, biological exposure standards, etc.**

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection : No respiratory protection is normally required. If heated material generates vapor or fumes that are not adequately controlled by ventilation, wear an appropriate respirator. Use the following elements for air-purifying respirators: Organic Vapor and Formaldehyde. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
Dust safety masks are recommended when the dust concentration is excessive.

Eye protection : Use of safety glasses with side shields for solid handling is good industrial practice. If this material is heated, wear chemical goggles or safety glasses with side shields or a face shield. If there is potential for dust, use chemical goggles.

Skin and body protection : At ambient temperatures use of clean and protective clothing is good industrial practice. If the material is heated or molten, wear thermally insulated, heat-resistant gloves that are able to withstand the temperature of the molten product. If this material is heated, wear insulated clothing to prevent skin contact if engineering controls or work practices are not adequate.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties**

Appearance

Physical state : solid
Color : Opaque
Odor : Mild to no odor
Odor Threshold : No data available

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| | | |
|---|---|---|
| pH | : | Not applicable |
| Pour point | : | No data available |
| Melting point/freezing point | : | 90-140°C (194-284°F) |
| Initial boiling point and boiling range | : | Not applicable |
| Flash point | : | No data available |
| Evaporation rate | : | Not applicable |
| Flammability (solid, gas) | : | No data available |
| Lower explosion limit | : | Not applicable |
| Upper explosion limit | : | Not applicable |
| Vapor pressure | : | Not applicable |
| Solubility | : | negligible |
| Relative density | : | Not applicable |
| Density | : | 0.91 - 0.97 g/cm ³ Please refer to the Technical Data Sheet (TDS) for more detailed information relating to the nominal physical properties, including density, of this polyethylene resin grade. |
| Vapor density | : | Not applicable |
| Partition coefficient: n-octanol/water | : | No data available |
| Autoignition temperature | : | No data available |
| Decomposition temperature | : | Low molecular weight hydrocarbons, alcohols, aldehydes, acids and ketones can be formed during thermal processing. |
| Viscosity, kinematic | : | Not applicable |
| Solubility in other solvents | : | No data available |
| Viscosity, dynamic | : | Not applicable |

SECTION 10: Stability and reactivity

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- Reactivity** : This material is considered non-reactive under normal ambient and anticipated storage and handling conditions of temperature and pressure.
- Chemical stability** : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
- Possibility of hazardous reactions**
- Conditions to avoid** : Avoid prolonged storage at elevated temperature.
- Materials to avoid** : Avoid contact with strong oxidizing agents.
- Thermal decomposition** : Low molecular weight hydrocarbons, alcohols, aldehydes, acids and ketones can be formed during thermal processing.
- Hazardous decomposition products** : Normal combustion forms carbon dioxide, water vapor and may produce carbon monoxide, other hydrocarbons and hydrocarbon oxidation products (ketones, aldehydes, organic acids) depending on temperature and air availability. Incomplete combustion can also produce formaldehyde.
- Other data** : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information**Information on exposure routes****Marlex® HHM 5502BN Polyethylene****Acute oral toxicity** : Presumed Not Toxic**Marlex® HHM 5502BN Polyethylene****Acute inhalation toxicity** : Presumed Not Toxic**Marlex® HHM 5502BN Polyethylene****Acute dermal toxicity** : Presumed Not Toxic**Marlex® HHM 5502BN Polyethylene****Skin corrosion or irritation** : No skin irritation**Marlex® HHM 5502BN Polyethylene****Eye corrosion or irritation** : No eye irritation**Marlex® HHM 5502BN Polyethylene****Respiratory Sensitization** : No data available

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Marlex® HHM 5502BN Polyethylene**Skin sensitization** Did not cause sensitization on laboratory animals.**Specific Target Organ
Toxicity (Single Exposure)**

Not classified due to data which are conclusive although insufficient for classification.

**Specific Target Organ
Toxicity (Repeated
Exposure)**

Not classified due to data which are conclusive although insufficient for classification.

Marlex® HHM 5502BN Polyethylene**Further information** : This product contains POLYMERIZED OLEFINS. During thermal processing (>350°F, >177°C) polyolefins can release vapors and gases (aldehydes, ketones and organic acids) which are irritating to the mucous membranes of the eyes, mouth, throat, and lungs. Generally these irritant effects are all transitory. However, prolonged exposure to irritating off-gases can lead to pulmonary edema. Formaldehyde (an aldehyde) has been classified as a carcinogen based on animal data and limited epidemiological evidence.**SECTION 12: Ecological information**

Ecological Toxicity

Toxicity to fish : Not applicable**Toxicity to daphnia and
other aquatic invertebrates** : No data available**Toxicity to algae** : No data available**Persistence and
degradability** Persistence
and degradability : Result: This material is not expected to be readily biodegradable.

Bioaccumulative : Does not bioaccumulate.

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- Mobility : The product is insoluble and floats on water.
- Results of PBT assessment : Not available
- Other adverse effects : This material is not expected to be harmful to aquatic organisms., Fish or birds may eat pellets which may obstruct their digestive tracts.

Ecotoxicology Assessment

- Short-term (acute) aquatic hazard : This product has no known ecotoxicological effects.
- Long-term (chronic) aquatic hazard : This product has no known ecotoxicological effects.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

| | | |
|--|---|-----------------------------------|
| UN Number | : | not regulated |
| UN Product Shipping Name | : | Not regulated as a dangerous good |
| Hazard Class | : | |
| Packing Group | : | Not applicable |
| Marine Pollutant | : | Not applicable |
| Special Safety Measures on Mode of Transport | : | No data available |

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION

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BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

| | | |
|--------------------------|---|-----------------------|
| Other information | : | Not applicable |
|--------------------------|---|-----------------------|

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Maritime transport in bulk according to IMO instruments**SECTION 15: Regulatory information****National legislation****Regulation under the Occupational Safety and Health Act**

A Material Safety Datasheet (MSDS) for this product is not required according to article 41 of the ISHA.

| Regulation | Chemical name | Threshold limits |
|--|---------------|------------------|
| Harmful Substances Prohibited from Manufacturing | : | Not applicable |
| Harmful Substances Required Permission for Manufacture | : | Not applicable |

Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

| Regulation | Chemical name | Threshold limits |
|-------------------------|---------------|------------------|
| Toxic Chemicals | : | Not applicable |
| Prohibited Chemicals | : | Not applicable |
| Restricted Chemicals | : | Not applicable |
| Toxic Release Inventory | : | Not applicable |

Dangerous Substances Safety Management Act

Dangerous Substances : Not applicable
Safety Management Act

Regulations by the Waste Management Act : Polyethylene Hexene Copolymer: Designated Waste

Regulations by other domestic and foreign laws

Europe REACH : This product is in full compliance according to REACH regulation 1907/2006/EC.
Switzerland CH INV : On the inventory, or in compliance with the inventory
United States of America (USA) TSCA : On or in compliance with the active portion of the TSCA inventory
Canada DSL : All components of this product are on the Canadian DSL
Australia AIIC : On the inventory, or in compliance with the inventory
New Zealand NZIoC : On the inventory, or in compliance with the inventory
Japan ENCS : On the inventory, or in compliance with the inventory
Philippines PICCS : On the inventory, or in compliance with the inventory
Korea KECI : All substances in this product were registered, notified to be registered, or exempted from registration by CPChem through an Only Representative according to K-REACH regulations. Importation of this product is permitted if the Korean Importer of Record was

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included on CPCChem's notifications or if the Importer of Record themselves notified the substances.

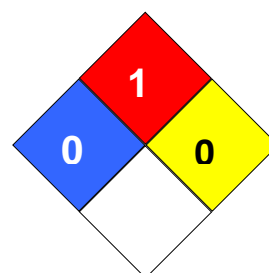
Taiwan TCSI : On the inventory, or in compliance with the inventory
 China IECSC : On the inventory, or in compliance with the inventory

Other regulations : No data available

SECTION 16: Other information

| | | |
|-------------------------|---|---------------------------------|
| Source of data | : | Korea. GHS based classification |
| Date of initial writing | : | 2019-10-21 |
| Revision number | : | 1 |
| Last revision date | : | 2021-12-20 |

NFPA Classification : Health Hazard: 0
 Fire Hazard: 1
 Reactivity Hazard: 0

**Other information**

None.

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

| Key or legend to abbreviations and acronyms used in the safety data sheet | | | |
|---|---|-------|--------------------------------------|
| ACGIH | American Conference of Government Industrial Hygienists | LD50 | Lethal Dose 50% |
| AIC | Australian Inventory of Industrial Chemicals | LOAEL | Lowest Observed Adverse Effect Level |
| DSL | Canada, Domestic Substances | NFPA | National Fire Protection Agency |

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| | List | | |
|--------|--|-------|--|
| NDSL | Canada, Non-Domestic Substances List | NIOSH | National Institute for Occupational Safety & Health |
| CNS | Central Nervous System | NTP | National Toxicology Program |
| CAS | Chemical Abstract Service | NZIoC | New Zealand Inventory of Chemicals |
| EC50 | Effective Concentration | NOAEL | No Observable Adverse Effect Level |
| EC50 | Effective Concentration 50% | NOEC | No Observed Effect Concentration |
| EGEST | EOSCA Generic Exposure Scenario Tool | OSHA | Occupational Safety & Health Administration |
| EOSCA | European Oilfield Specialty Chemicals Association | PEL | Permissible Exposure Limit |
| EINECS | European Inventory of Existing Chemical Substances | PICCS | Philippines Inventory of Commercial Chemical Substances |
| MAK | Germany Maximum Concentration Values | PRNT | Presumed Not Toxic |
| GHS | Globally Harmonized System | RCRA | Resource Conservation Recovery Act |
| >= | Greater Than or Equal To | STEL | Short-term Exposure Limit |
| IC50 | Inhibition Concentration 50% | SARA | Superfund Amendments and Reauthorization Act. |
| IARC | International Agency for Research on Cancer | TLV | Threshold Limit Value |
| IECSC | Inventory of Existing Chemical Substances in China | TWA | Time Weighted Average |
| ENCS | Japan, Inventory of Existing and New Chemical Substances | TSCA | Toxic Substance Control Act |
| KECI | Korea, Existing Chemical Inventory | UVCB | Unknown or Variable Composition, Complex Reaction Products, and Biological Materials |
| <= | Less Than or Equal To | WHMIS | Workplace Hazardous Materials Information System |
| LC50 | Lethal Concentration 50% | ATE | Acute toxicity estimate |